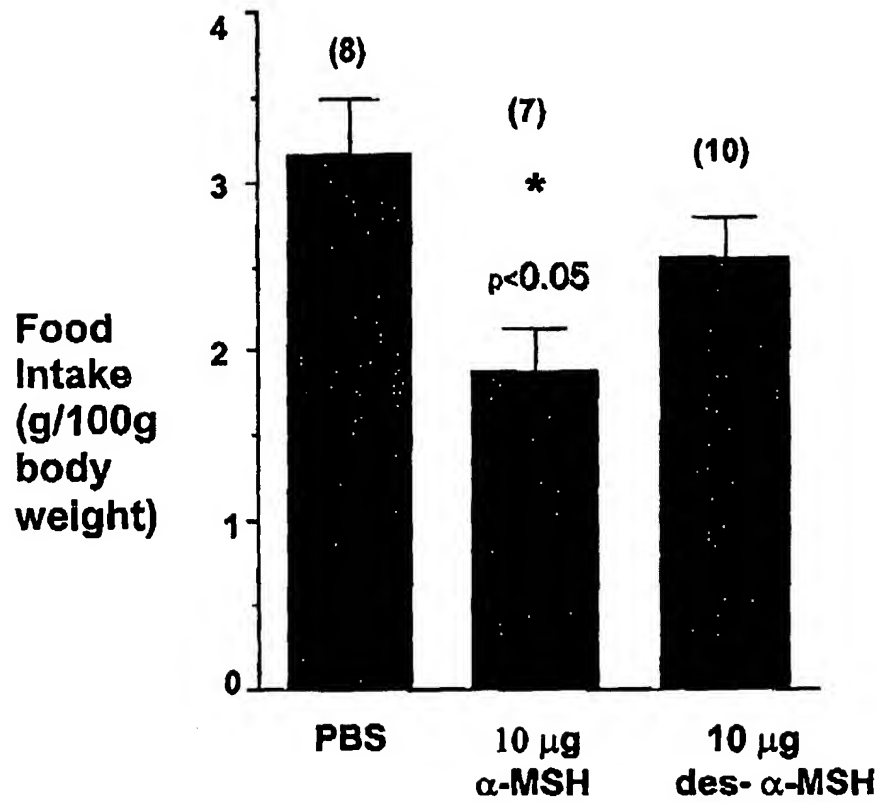
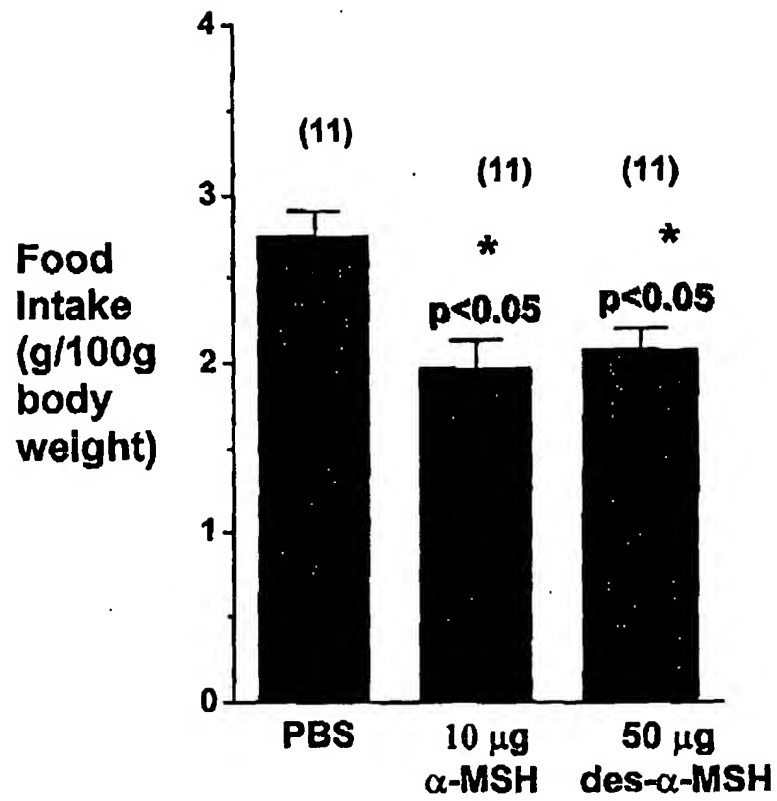
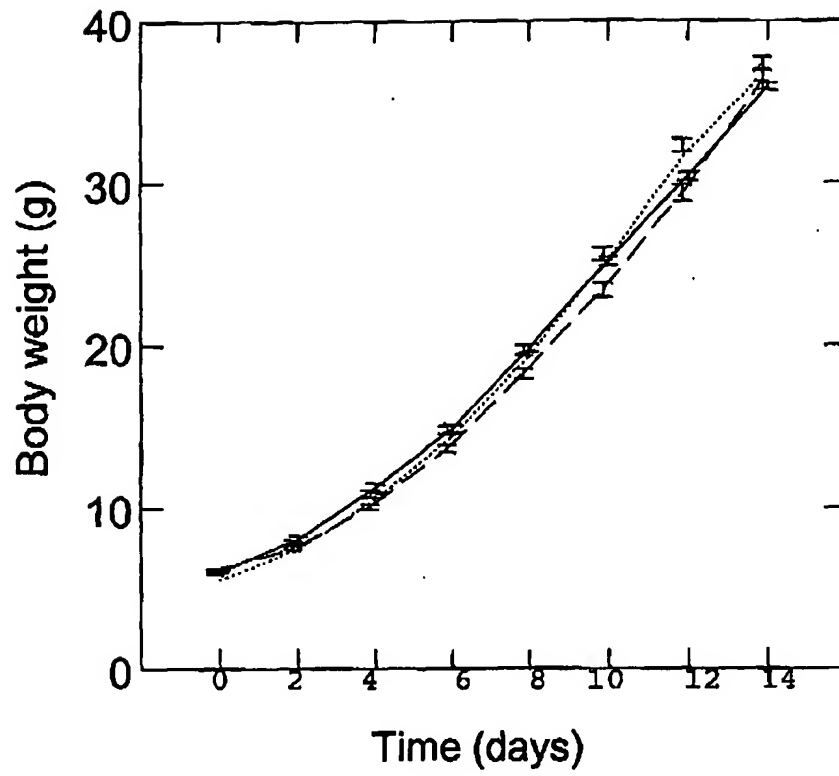


FIGURE 1

**Figure 2**

**Figure 3**

**Figure 4**

564
bp

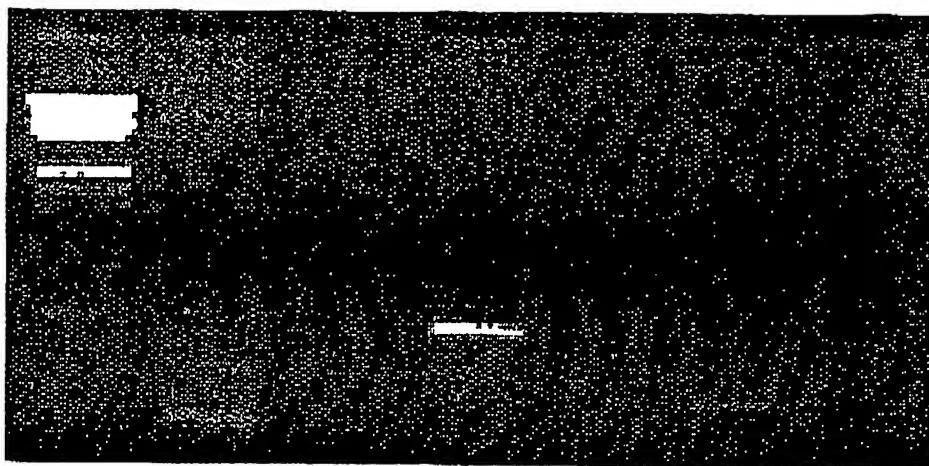
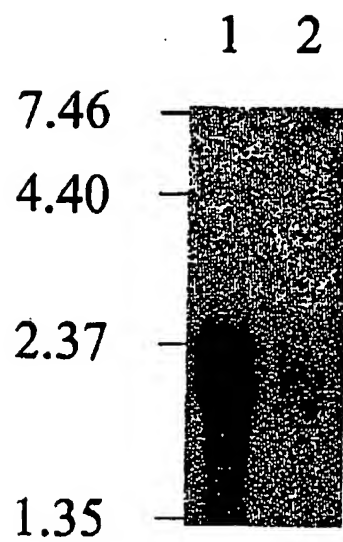


Figure 5

**Figure 6**

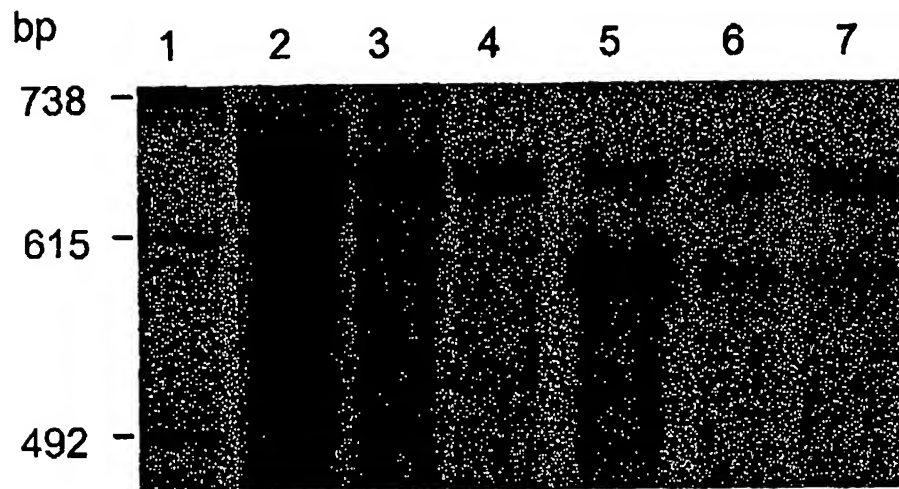
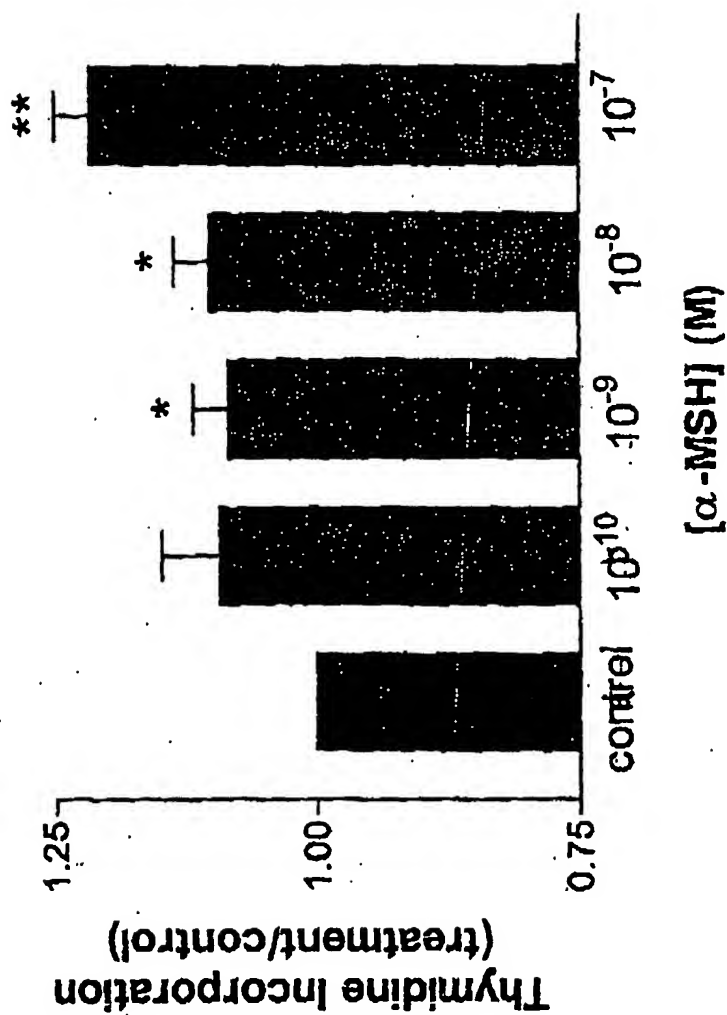


Figure 7

FIG 8.

**Effects of α -MSH on
Thymidine incorporation in
Osteoblasts**



*=significantly different from control ($p < 0.04$)

**=significantly different from control ($p < 0.001$)

9/15

Des-acetyl α -MSH is Antagonistic to α -MSH in Osteoblasts

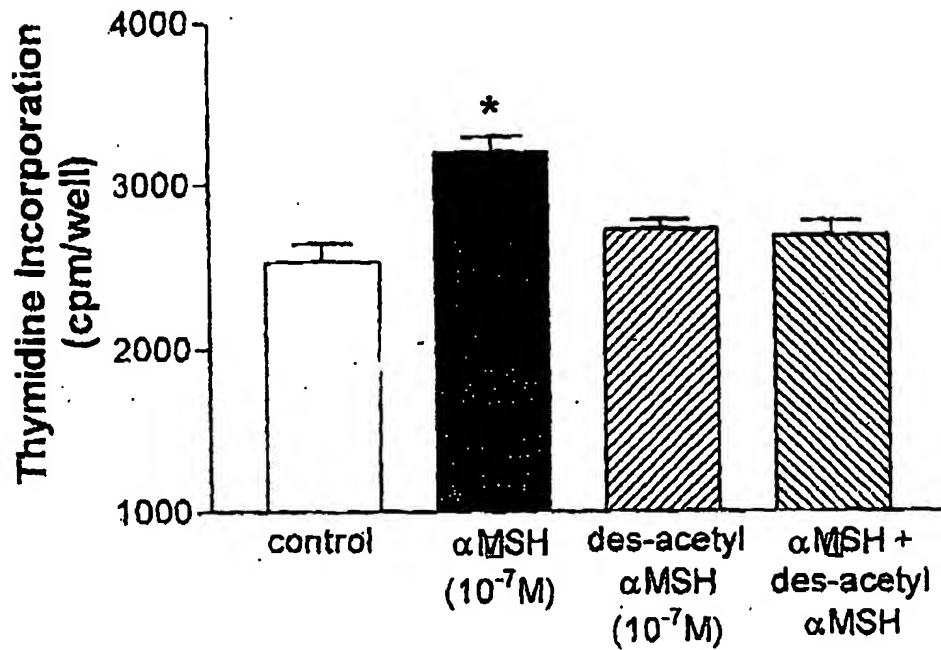
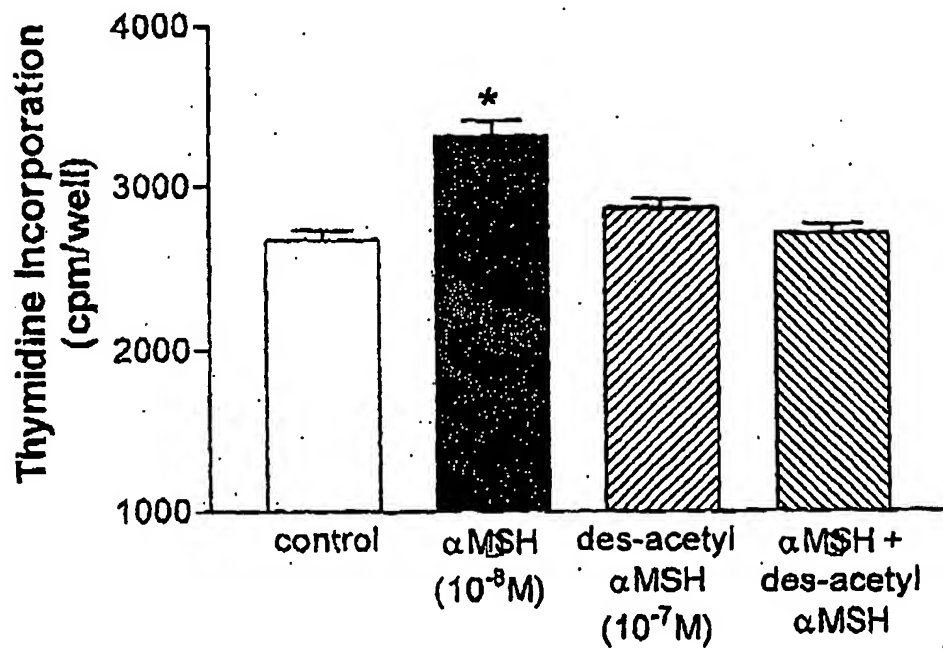
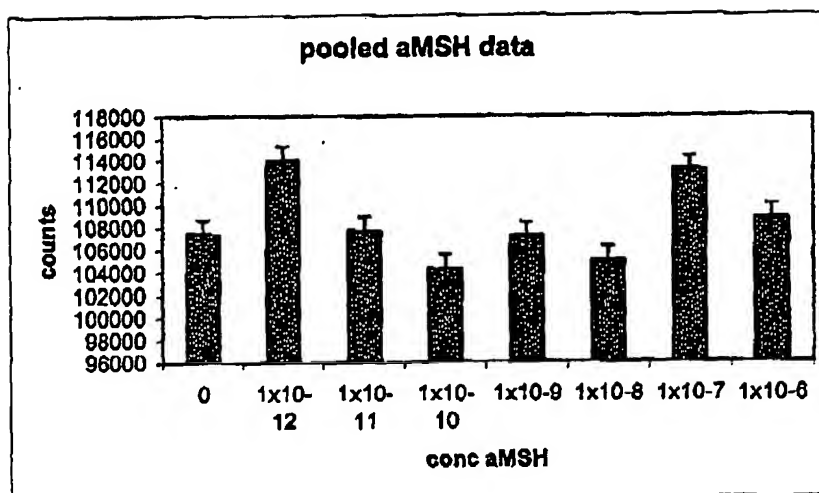


FIG 9



**Figure 10**

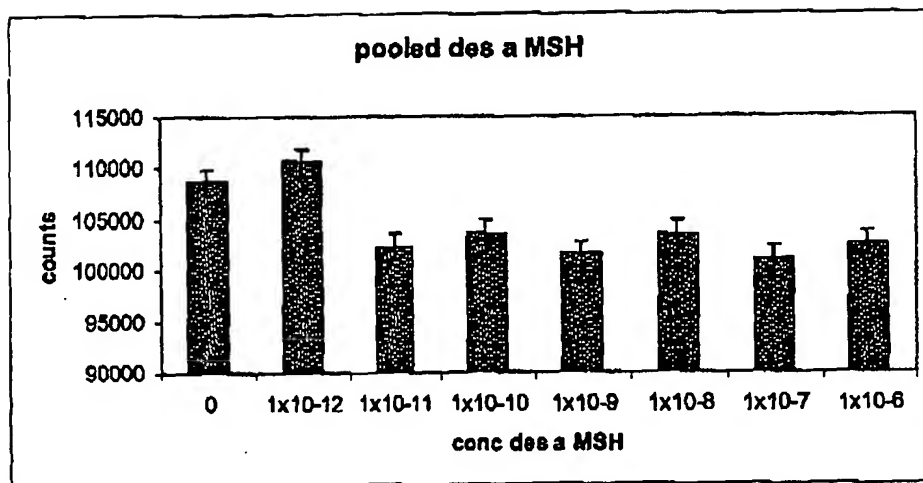


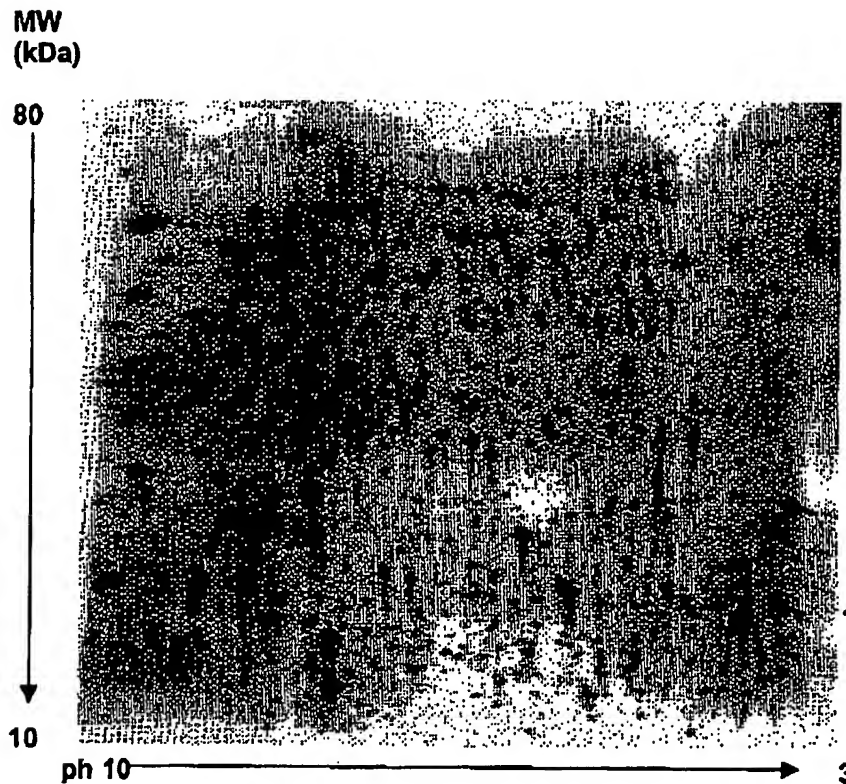
Figure 11

FIGURE 12A

Examples of proteins identified

Protein	Spot no. (Fig 3,4)	α -MSH effect compared to control	des- α -MSH effect compared to control
Stress protein			
heat shock protein homologue	p1350 (3)	1.8 fold increase	
Enzymes			
Glyceraldehyde-3-phosphate-dehydrogenase	p1528 (3)	*	
	p582 (4)		
	p1210 (4)		2.4 fold decrease
	p582 (4)		*
	p582 (4)		*
aldo-keto reductase			
citrate synthase			
creatine kinase			
pyruvate synthase alpha-chain	p706 (3)		
f1 ATPase alpha-chain	p86 (4)		
	p1528 (3)	1.7 fold increase	1.6 fold decrease
Cytoskeletal proteins			
tubulin beta chain	p711 (3)	1.4 fold increase	

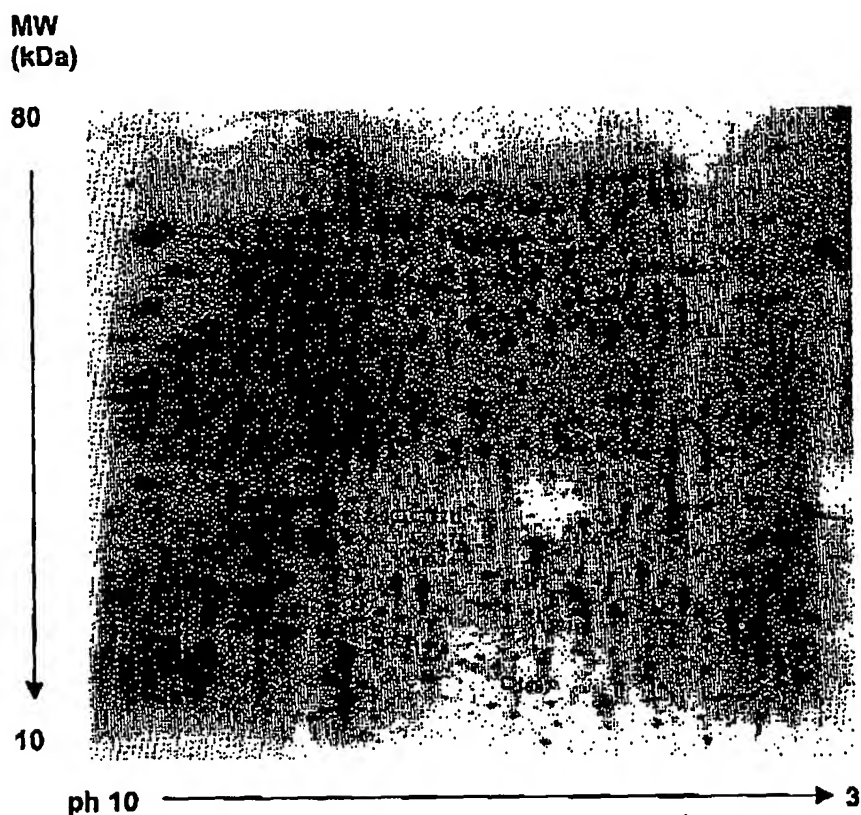
* Multiple proteins that appeared as a single spot on the 2D gel.



Proteins changed by α -MSH

treatment Location of proteins of interest (black-circles) on the reference gel. Numbers correspond to protein labels on the reference gel. Significant increase ($p < 0.05$, Mann-Whitney U test) in protein expression in α -MSH treated group is labeled in blue, decrease in red. Underlined protein p611 expression also significantly changed in des- α -MSH treated group.

Figure 12B



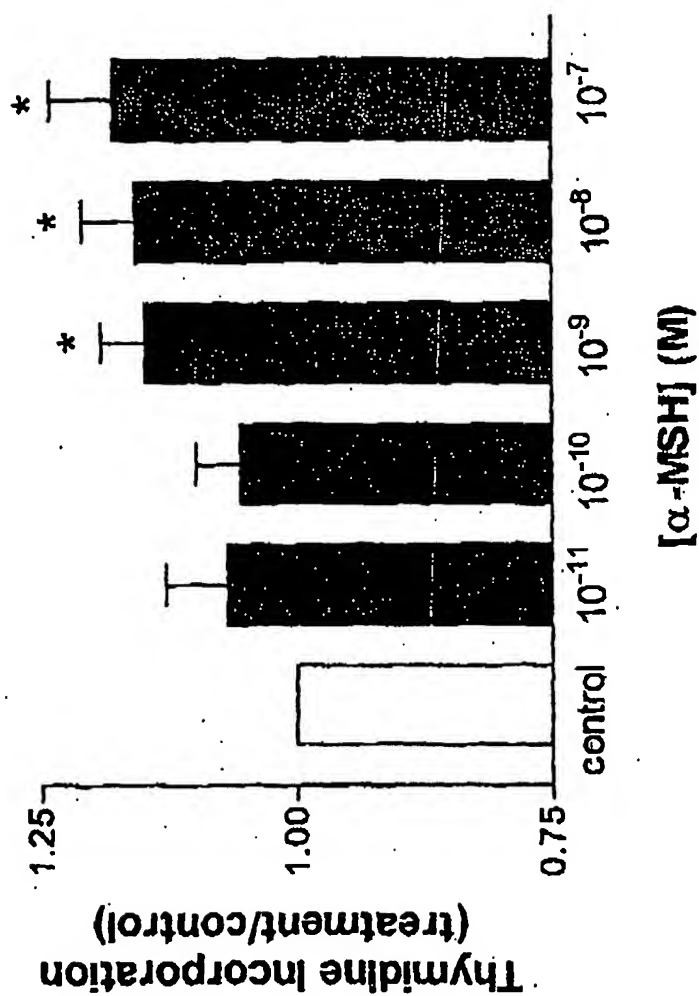
Proteins changed by des- α -MSH

treatment Location of proteins of interest (black-squares) on the reference gel. Numbers correspond to protein labels on the reference gel. Significant increase ($p < 0.05$, Mann-Whitney U test) in protein expression in des- α -MSH treated group is labeled in blue, decrease in red. Underlined protein p611 expression also significantly changed in α -MSH treated group.

Figure 12C

FIG. 13.

**Effects of α -MSH on Thymidine
Incorporation in Chondrocyte Monolayers**



*=significantly different from control ($p < 0.03$)

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